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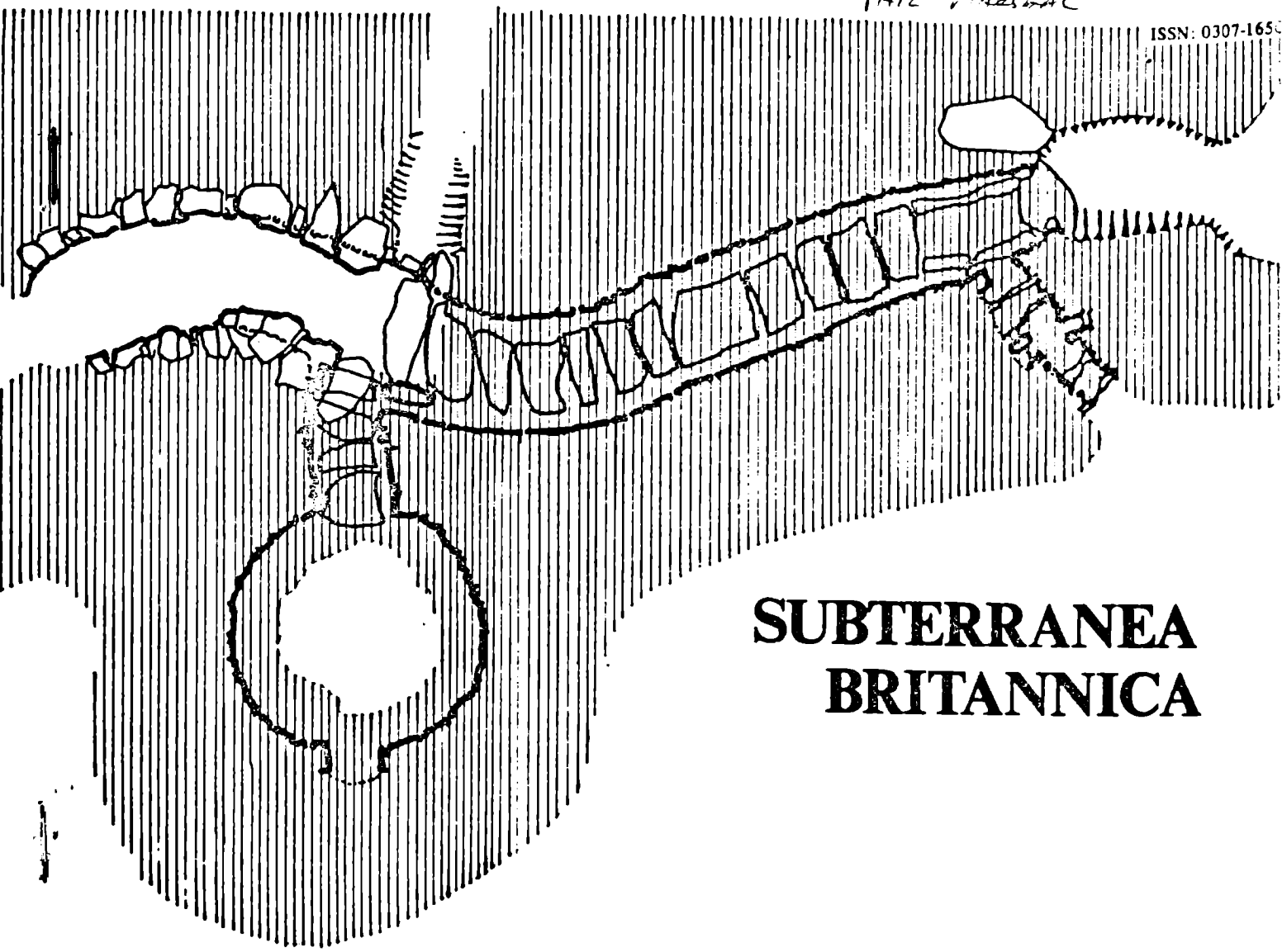

SUBTERRANEA BRITANNICA

Bulletin No. 11

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CONTENTS

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This Bulletin is the official publication of the Federation of Subterranea Britannica, but is edited, published and distributed by the Cambs. and Herts. Branch.

Subterranea Britannica is in association with Société Française D'Étude des Souterrains of France, and Arbeitskreis für Erdstallforschung of Germany.

Bulletin compiled by Sylvia P. Beamon.

OCTOBER DAY CONFERENCE AND ANNUAL GENERAL MEETING (CAMBS. & HERTS. BRANCH)

The Chairman, Dr. John Alexander opened the meeting which was held on Saturday, the 20th October, 1979 at Lucy Cavendish College, Cambridge. The business for the Annual General Meeting was formally conducted and Dr. Alexander announced that he was resigning Chairmanship after his four years' of office. It was left to the Committee to elect their new Chairman. Mrs. Janet Hazelwood resigned due to family commitments and Mr. David Wallington as he was shortly to take up a position in Bermuda. Mrs. M. Walker and Mr. A. Rawcliffe were welcomed to the Committee and we offer our thanks to the retiring members.

The meeting continued with the reading of the following papers:-

Dave Barnes, B.Sc. (Econ.) of the Fortress Study Group lectured on Underground Fortresses. This was a most interesting account, fully illustrated with slides, on the construction of fortresses and their underground workings. After the lecture the remains of the nearby Cromwellian fortress on Castle Hill, Cambridge were visited and discussed.

The afternoon commenced with Paul Sowan, B.Sc., F.R.G.S., F.G.S., F.L.S. speaking on the Dutch Stone Mines, and in particular, the extensive mines at Maastricht which he had visited earlier in the year.

Both the aforementioned papers will appear in Bulletin No. 12.

Brief Communications: Mrs. Sylvia Beamon gave a resume of the 1979 International Symposium held at Pons (Charente Maritime), then showed slides of Mr. Adey Horton's troglodyte dwelling at Troo. Some members will recall Mr. Horton's lecture to the Society in 1975.

Mr. Alan MacCormick gave a brief review of the work upon which the Nottingham societies are engaged at present and showed slides of the recently found new system at Goosegate.

Mr. John Scott had taken a series of slides of the Society's activities, particularly of the 1978 International Conference held in England with visits to Nottingham and Chatham, and showed them to interested members.

IRONBRIDGE WEEKEND STUDY TOUR, 29TH JUNE - 1ST JULY, 1979

Members of Subterranea Britannica and the Shropshire Caving and Mining Club assembled at Maws Tile Works on the Friday evening for an introductory talk by Dr. Ivor Brown on underground features in Ironbridge and the surrounding area of Shropshire. This was illustrated by slides and supported by photographs and plans of sites to be visited.

On the following morning Dr. Brown guided members on a walking tour around Ironbridge, pointing out an ironstone mine and limestone mine amongst many other features. Members also visited the Tar Tunnel (Bulletin No. 9 p.8 - 9)

A buffet lunch was arranged at the Tontine Hotel. During the afternoon, as sufficient cars were available, the delegates visited Pendrill's Cave, Weston Park; Caynton Hall underground temple; Tong Castle and its Ice House under the direction of Mr. Alan Wharton (Ref: Bulletin No. 10, pp. 9 - 11) and the rock houses at Bridgnorth.

A room in the Tontine Hotel was set aside for members to show slides after the evening dinner.

On Sunday morning members were taken on a coach trip to Stiperstones mines and were grateful for the guidance of the area by members of the Shropshire Caving and Mining Club.

The Ironbridge Conference weekend was an excellent occasion; even though not many people participated, probably due to the shortage of petrol, those who did enjoyed it immensely. In particular, Miss M. Mahony must be singled out for our gratitude for arranging the accommodation, and the Nottingham members for the arrangements with the Ironbridge Gorge Museum Trust.

SYLVIA P. BEAMON.

We would like to record our thanks to the Ironbridge Gorge Museum Trust for hosting our venture, and to Mr. S. Smith, Dr. I. Brown also Mrs. P. M. Davies, B.A., M.Litt. Archaeology Project Supervisor who kindly produced the following maps and drawings.

STUDY WEEKEND AT BRISTOL - 27TH - 29TH JUNE, 1980

Following the very successful study weekend at Ironbridge it has been decided that Subterranea Britannica in conjunction with the Tunnel Study Society will hold a similar weekend in the Bristol area.

The itinerary is likely to be as follows:

(* = definite + = possible but arrangements are not finalised)

Friday night, 27th June:

Informal gathering of participants (+)

Saturday 28th:

Morning: Bristol Castle Tunnel (*)
Mediaeval Cellars near St. Nicholas Church (*)
Redcliffe Caves (+)

Afternoon: Goldney Grotto and associated tunnels (*)
Clifton Rocks Underground Funicular Railway remains of (+)

Evening: Talk on stone mining in the Bath area (+)

Sunday 29th:

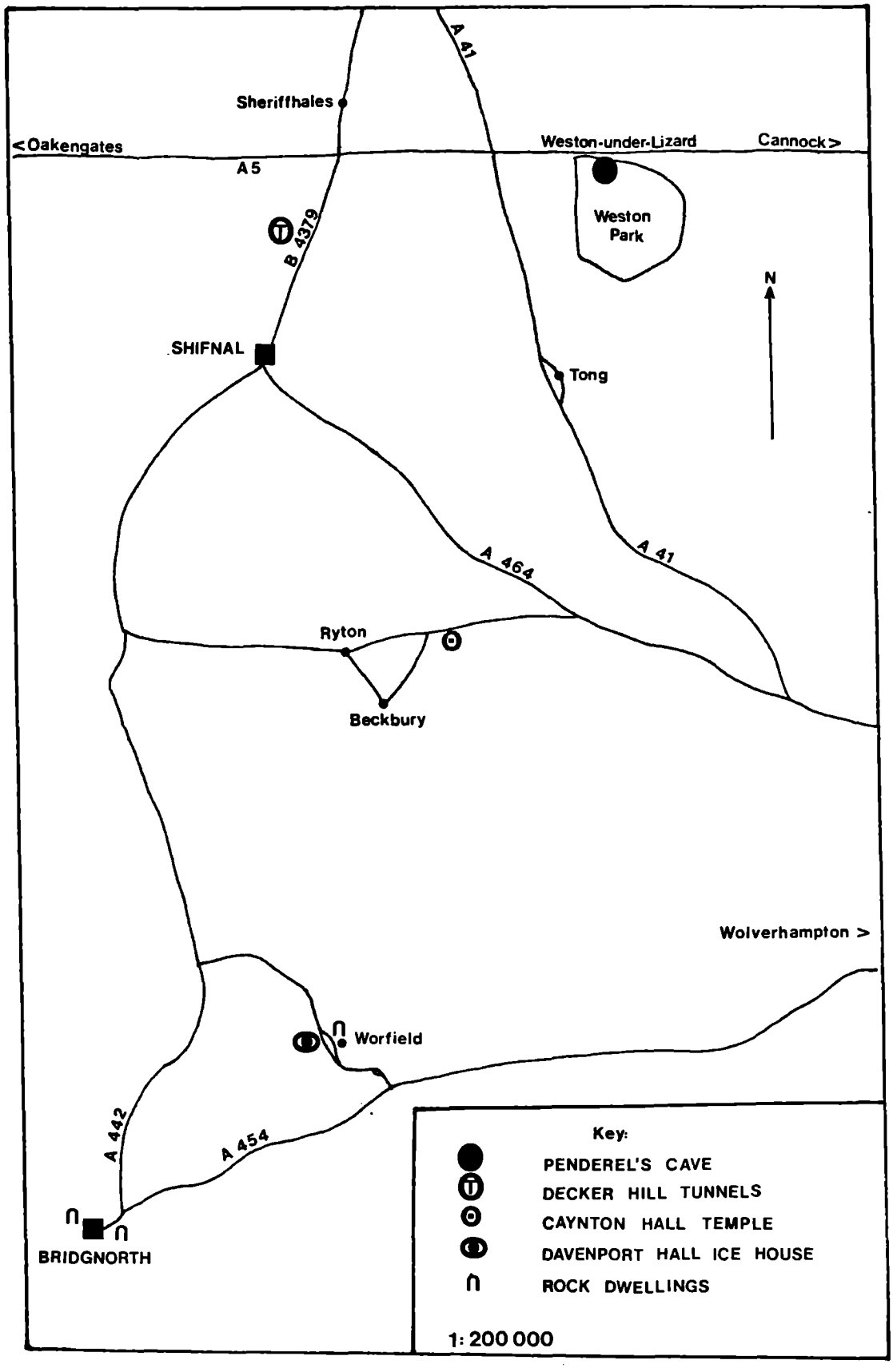
Morning: Box Freestone Mines (*)

Afternoon: Fonthill - tunnel and hermit's cave (+)

Forms and further information can be obtained from: P. Marshall, 26 Bayswater Avenue, Westbury Park, Bristol, BS6 7NT.

N.B. The International Symposium to be held at Roding, Germany, 12 - 14th July, 1980.

PLAN OF THE SITES VISITED ON THE IRONBRIDGE WEEKEND STUDY TOUR



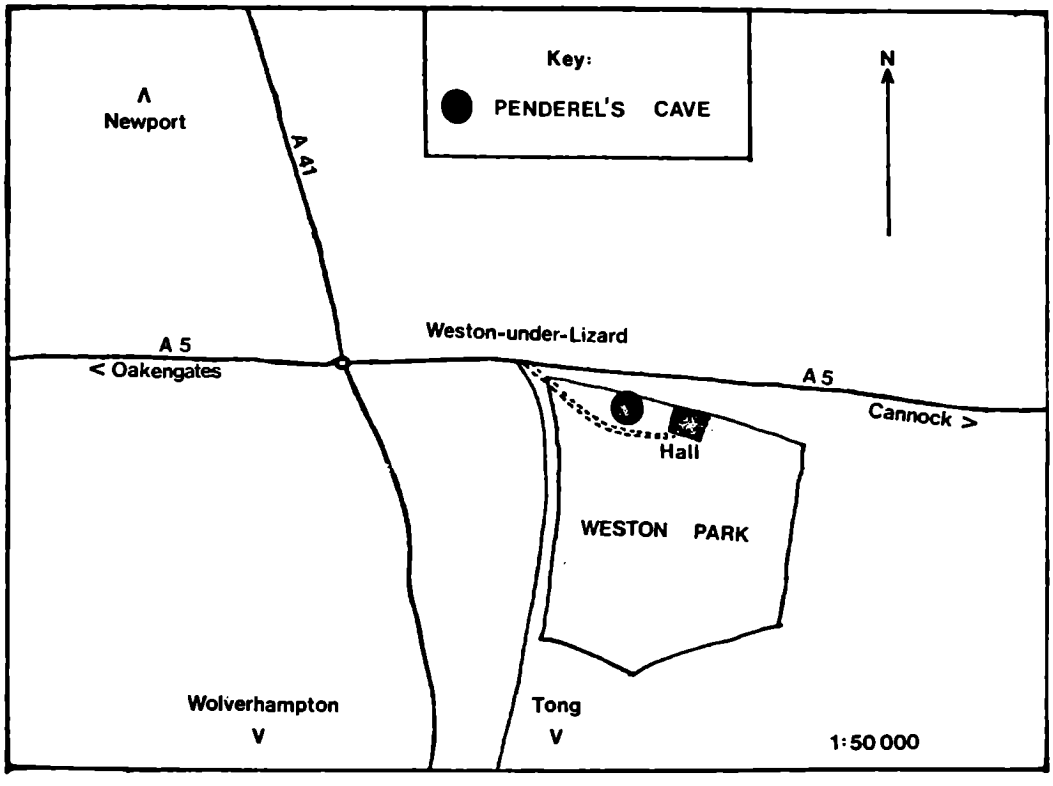
OS Sheets 127 & 136

PENDRILL'S CAVE, WESTON PARK

Pendrill or Penderel's cave is situated in the grounds of Weston Park, the family home of the Earls of Bradford. During the 18th Century the cave was the refuge of a mendicant named Penderel who was a descendant of the yeoman family of Penderel of Hubbal Grange and Boscobel. Members of this family were in receipt of a pension bestowed on them by Charles II as a reward for helping him during his flight from Worcester to Boscobel House in 1651. The descendant of the Penderel family who inhabited the cave, later inherited a portion of this pension on the death of a relative, and was thus able to quit his humble dwelling for more salubrious surroundings. He was, however, the subject of a long doggerel rhyme composed by an old steward at Weston Hall in 1812, which was printed and framed and hung up inside the cave.

References: Staffordshire Historical Collections v. 20, N.S. v.2 1899, p.335.
G. HOARE - The Last of Pendrill's Cottage. Shropshire Magazine Dec. 1969 p. 34 - 35.

Penderel's Cave, Shrewsbury Walk, Weston Park



OS Stafford & Telford - Sheet 127

Map Ref: 808 104

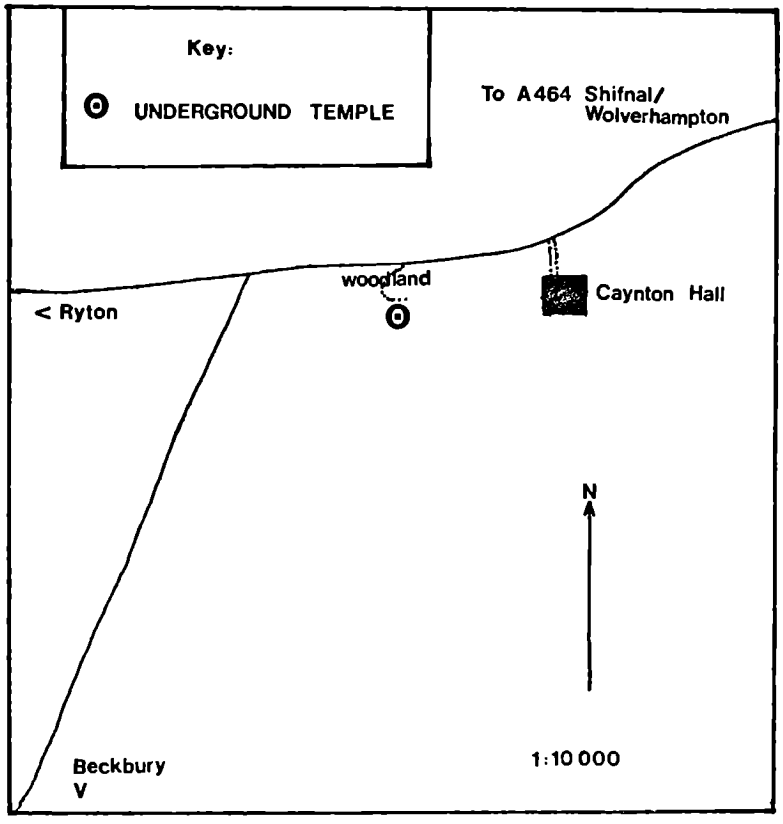
UNDERGROUND TEMPLE, CAYNTON HALL, BECKBURY

As yet no documentary evidence concerning the underground temple at Caynton Hall has come to light. Nor does there appear to be much information on the Hall, except for the fact that it was built in 1780.(1) This apparent lack of information is particularly surprising since this temple must rank as one of the most impressive underground sites in the area, and should not be missed.

The rather uninspiring cave-like entrance which drops down some 2 m. from the base of the bank gives access to quite a complex underground structure consisting of a series of apertures, pillars, recesses and small chambers all carved with some care in the sandstone. Several good torches or lamps are needed to appreciate the full layout of the temple.

The temple entrance is situated in the far bank of the copse which is accessible from the road some 150 metres below the entrance to Canton Hall, and just below a farm gateway behind which stands a garage-like shed. A well-worn path runs from the road, round the copse, passing a sign 'Danger - subsidence' and leading right to the temple entrance.

Caynton Hall Underground Temple



OS Stafford & Telford - Sheet 127

Map Ref: 779 025

Additional information recently found:

The temple was built as an underground chapel by General Arthur Charles Legge (1) who was living at Caynton Hall during the latter part of the 19th Century.(2)

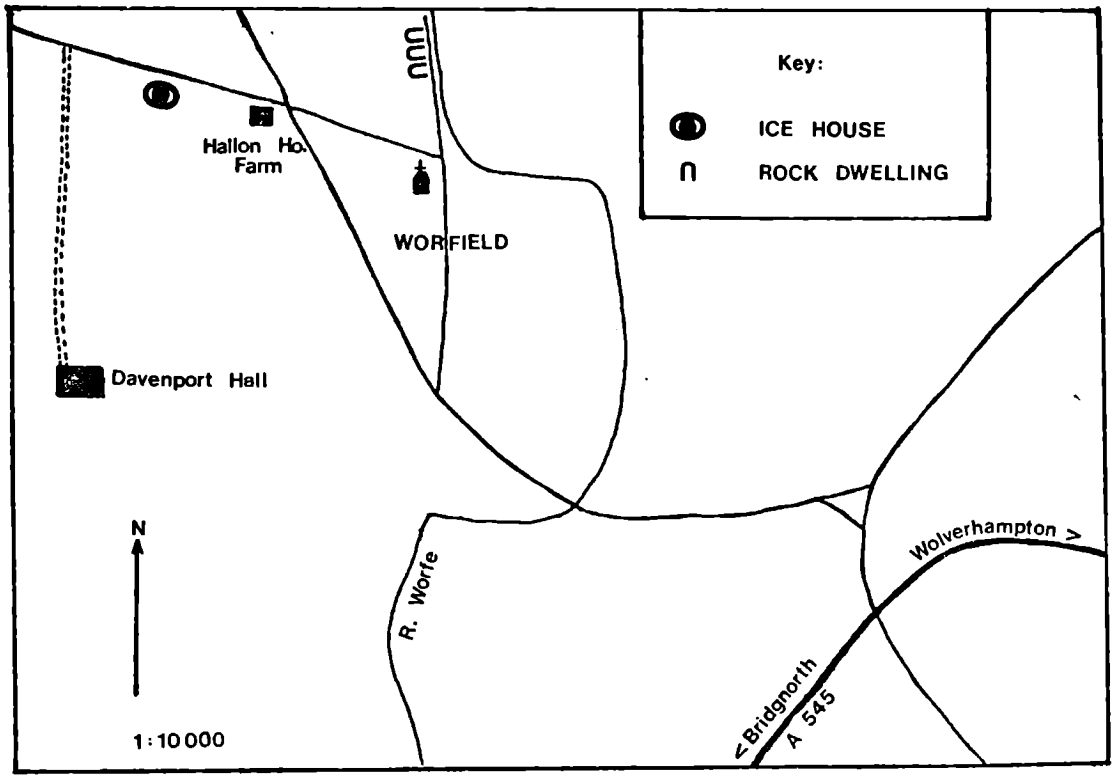
References: (1) Vivian BIRD - Exploring the West Midlands. Batsford. 1977, p. 170.
(2) P.O. Directory for Shropshire 1874; 1879.

ICE-HOUSE, WORFIELD

This ice-house belonged to Davenport Hall built between 1726-7 by Henry Davenport. As a young man he went out to India where he is said to have amassed a considerable fortune which he brought home with him in two large chests, and which no doubt helped finance him impressive building project.(1)

The ice-house is situated on the left of the lane leading down past Hallon House Farm, and set halfway up a tree-lined bank. Unfortunately the ice-house itself has been bricked-up, although part of the entrance is still accessible to a depth of about 2 metres.

Davenport Hall Ice House, Worfield near Bridgnorth



OS Kidderminster & Wyre Forest - Sheet 138

Map Ref: 758 954

ROCK DWELLINGS

In Worfield itself, down past the church, and immediately behind the Fly Fishers car park, are a series of what appear to have been rock dwellings. Mr. Tudor of Hallon House Farm has suggested that this was the site of St. Peter's Well and cave, although a cursory investigation provided no conclusive evidence. According to S. B. James in his book Worfield on the Worfe 1878, the well consisted of a freshwater spring with a simple surrounding wall, and was the subject of debate during James I reign as to whether it was named after Peter the Apostle or after some less distinguished Peter. Near the well was a cave which, with a built up brick frontage and a door and inserted, served as the home for many years of an old lady named Sarah. She was very much a local character and a keen churchgoer, until one day she suspected the vicar of directing his text specifically at her - "Wash you and make you clean". The conditions in which she lived apparently made it very difficult to keep herself free from soot, soil and sandstone, and from that day onwards she refused to go to church.(2)

References: J. RANDALL - Worfield. 1887. p. 76.
S. B. JAMES - Worfield on the Worfe. 1878. p. 61.

TUNNELS, DECKER HILL, NEAR SHIFNAL

The hall at Decker Hill, originally known as Drayton, was held by the tenants of the Lords of Idsall (Shifnal) from an early period.(1) In 1784 a Mr. T. Fitzwilliam bought the property which he subsequently enlarged, and to which he gave the name Decker Hill.

Within the grounds of the hall are two underground, man-made arched tunnels used as secluded roadways through the estate by the lords of the manor. They are both estimated to be about 18 metres long, and were built on a curve to discourage livestock from wandering through. Their construction is probably associated with the Botfield era at Decker Hill circa 1810, or perhaps a little earlier. Near the tunnels is a possible ice-house although it is only accessible by means of ropes.

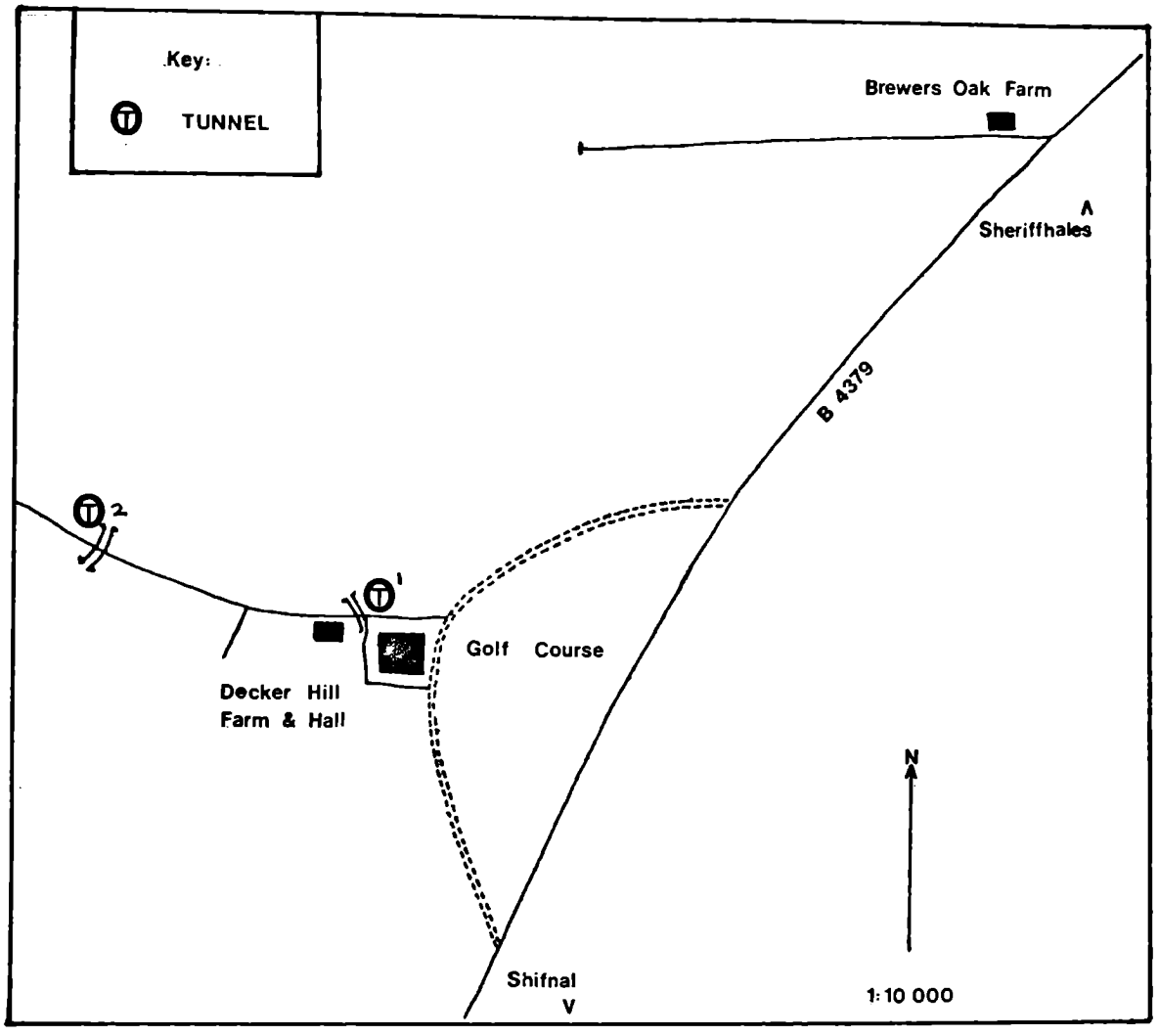
Beneath the Hall itself are a series of brick-built drainage tunnels which are large enough to crawl through. Cast iron drainage pipes appear to have been installed at a later period.

There are also two deep wells and an old paved fish pond/swimming pool in the vicinity.(2)

Proceed across the golf course following the road to Decker Hill Farm. Immediately opposite the farm in a wall at the junction of two lanes is one of the entrances to tunnel 1. This runs under the farm lane and is apparently blocked up at the other end. Continue straight on past the farm and along a high brick wall to the woodland beside the lane. The second tunnel, which is open at both ends, runs from the wood under the farm track. Further into the wood, at the edge of the golf course, is a small Greek temple, known as the 'Temple of Diana'.

Most of the Decker Hill features are on land belonging to Mr. Dakin of Brewers Oak Farm, and he would be willing to give directions to any of the other features mentioned.

Decker Hill Tunnels, near Shifnal



OS Stafford & Telford – Sheet 127

Map Refs: 748 108; 757 102.

References: (1) The Salopian & West Midland Illustrated Journal, Oct. 1878 No. 44 p. 19.
Reprinted from J. RANDALL - Shifnal and Its Environs

(2) Pers. Comm. Mr. Dakin, Brewer's Oak Farm, the landowner.

THE HERMITAGE, BRIDGNORTH

Local tradition has it that the Hermitage (SO 7278 9344) was inhabited as far back as Saxon times when it was said to have been occupied by a brother of King Athelstan. However, a more likely date for its construction is the 11th - 12th Century.

The cell was excavated out of the soft sandstone with a place for an altar and recesses for crucifix, lamp, piscina and credence. There were also several well defined Norman arches with rough mouldings. A flight of six stone steps led from the chapel up to the hermit's dormitory. The site was the subject of archaeological investigations in 1877 by Hubert Smith, and his findings are published in the Transactions of the Shropshire Archaeological Society 1878, v.1, p. 159 - 177.

The Hermitage caves were reutilised as a rock dwelling, and Rother Mary Clay's Hermits and Anchorites of England (Methuel 1914) contains a photograph showing the chapel with a built up brick frontage and a window and door inserted. In fact, many of the features indicated on the 1878 plan by Smith have disappeared either by human or natural agencies. However, the chapel area and stairwell with 5 steps are still extant.

There are numerous remains of rock dwellings all over Hermitage Hill as well as those along the cliffs beside the river Servern in Bridgnorth itself. There are bricked-up dwellings along the Cartway which leads down from the end of High Street towards the river.

Parking is difficult on Hermitage Hill, although there is a small lay-by on the left beyond the top of the hill. Alternatively, there is probably parking space in the housing estate at the foot of the hill. The footpath to the Hermitage is signposted at the roadside just above the cemetery, and is in the centre of the first series of caves.

REGISTER OF OTHER UNDERGROUND SITES:

(a) The East Shropshire Area.

Woodcote, Nr. Newport
ICE-HOUSE
On A41 south of Newport, take B4379 past Bloomsbury to Heath Hill. Site near wood and Roman Catholic Cathedral.

Sheriffhales (on B4379)
SAND MINE
Large cave at crossroads, opposite Sheriffhales Chapel.

Higford
ROCK DWELLINGS
Off minor road between Sutton Maddock and Beckbury. Two rock dwellings at Higford Wharf where road to Higford comes to a dead end. Now used as coal stores by neighbouring cottages.

Badger, between Worfield and Beckbury
ICE-HOUSE (possible) in Badger Dingle - once part of the ornamental grounds of Badger Hall, now demolished. There are said to be a series of caves in the rocks around the Dingle, including one which contains an iron tank. This has been described as a possible ice-house (Shropshire Magazine, Sept. 1962). Access from road through wood immediately south of the village, although the Dingle itself is privately owned.

(a) The East Shropshire Area (Cont'd)

Eardington, near Bridgnorth
UNDERGROUND CANAL
Linking upper and lower forges at Eardington.
Ref: B. TRINDER - Shropshire Newsletter 41, Sept. 1971, p. 23.

Donnington Wood Colliery
UNDERGROUND CANAL
Shown on 1788 plan of Donnington Wood Colliery.
Ref: B. TRINDER - Shropshire Newsletter 41, Sept. 1971, p. 23.

Madeley Court
PITS - ironstone and coal mines, furnace pits.
Ref: Ivor BROWN - Shropshire Newsletter 38, June 1970, p. 5 - 9

Mosseygreen, Ketley Hall
ICE-HOUSE/TAR DISTILLATION TUNNEL ?

Blists Hill
CLAY MINE (SJ 697936)
Early 19th Century - 1925; 1951 part re-opened and closed.
Ref: Ivor BROWN - Shropshire Newsletter 37, Dec. 1969, pp. 39 - 42.
MINES (SJ 695031)
Sunk 1799. The entrance to the Tar Tunnel was made into one of them.
Also in area 1846 Shawfield Colliery (SJ 697935); Newhill Pits;
Hill's Lane Colliery (SJ 703044), 1805 - 1910.
Ref: Ibid.

Coalport
TAR TUNNEL
Refs: B. TRINDER - Shropshire Newsletter 37, Dec. 1969, p.1;
Shropshire Newsletter 45, Mar. 1974, pp. 18 - 19.

Wombridge
CANAL TUNNEL Wombridge Farm, built in 1788.
Refs: Shropshire Magazine, 1954.
Shropshire Newsletter 33, 1967, p. 13.

Ironbridge
TUNNEL (OS 6662 0364). Possibly a William Reynolds tunnel. Access is from behind the Talbot Inn on the Wharfage.
Ref: Ivor BROWN - Shropshire Newsletter 42, 1972, pp. 8 - 9.

Pave Lane, nr. Lilleshall.
LIMEKILNS & TUNNELS - 4 kilns, 2 large and 2 small. Tunnels of two centre kilns still open in 1970, 23 ft. (7.01 m.) long and 9 ft. (2.97 m.) in diameter at entrance.
Ref: D. ADAMS and J. HAZELEY - Account 7, Survey of Church Aston-Lilleshall Mining Area, Shropshire Mining Club, 1970.

(b) Other Parts of Shropshire

Llanymynech Hill, Pant near Oswestry
ROMAN COPPER MINE
Refs: Shropshire Mining Club Publication No. 8
Excavation Report - Shropshire Newsletter 36, June 1969

Acton Burnell
ICE-HOUSE/GROTTO
On the hill east of Acton Burnell Castle ruins.
Ref: B. JONES - Follies and Grottoes, Constable, London, 1974.

(b) Other Parts of Shropshire (Cont'd)

Great Ness
KYNASTON'S CAVE (SJ 3843 1930)
Refuge of Humphrey Kynaston, son of Sir Roger Kynaston, outlawed in 1491, and pardoned by Henry VIII in 1516.
Ref: Trans. Shropshire Arch. Soc. v. 21, 1898, pp. 273 - 280
Camden's Britannia v. 3, 1806 ed. p. 35.

Hawkstone Park, Weston-under-Redcastle.
GROTTO CAVES, LABYRINTH, GIANT'S WELL, etc.
Castle and grounds bought by Sir Rowland Hill during mid 18th Century. Developed as tourist resort by end of the 18th Century with ornamental lakes, and a variety of grottoes and follies. The area is to be restored by C.P.R.E. and Shropshire Conservation Trust.
Refs: Shropshire Magazine, Mar. 1978, pp. 22 - 23.
B. JONES - Follies and Grottoes, Constable, London, 1974.

Cockshutt, near Ellesmere
GESENOK WELL Post-Norman (SJ 4148 3044)

Downton-on-the Rock, Downton Castle near Ludlow.
HERMIT'S CAVE (SO 4373)
Part natural, part man-made cavern 20 - 25 ft. (6.09 m. - 7.62 m.) high with spiral column.
Ref: B. JONES - Follies and Grottoes, Constable, London, 1974.

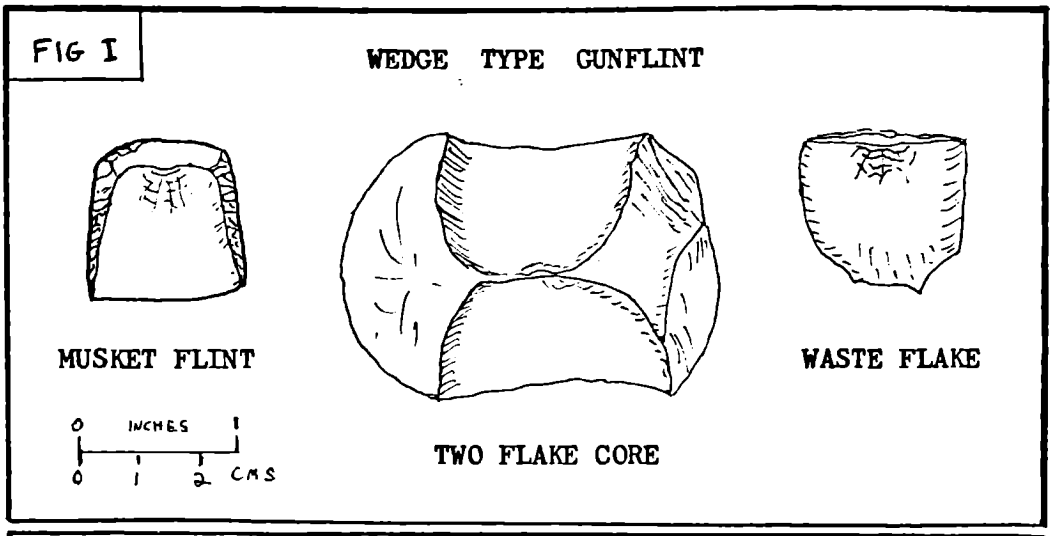
AN ENQUIRY INTO GUNFLINT MINING AND MANUFACTURE

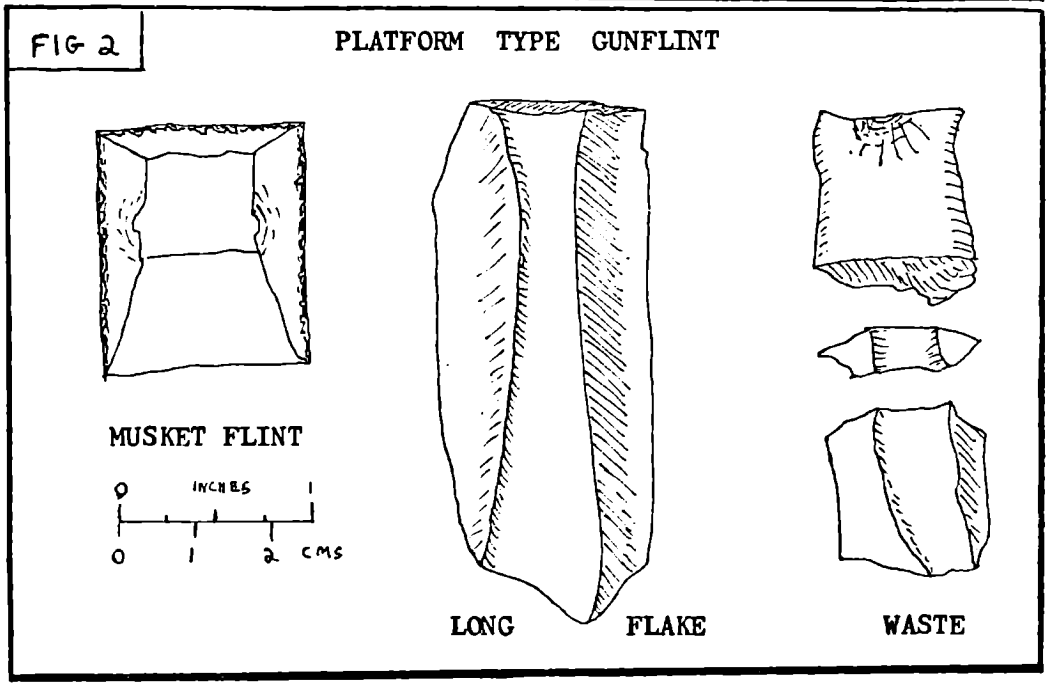
How often has the explorer of chalk pits come across any signs of flint extraction for the use of the gunflint-maker ? I believe that in very many cases evidence of such activity may have been overlooked through lack of recognition both of the type of flint sought by the gunflint-maker and of the tell-tale flint "waste" which he might have left behind him, either inside the chalk working or in its immediate neighbourhood. This article, therefore, seeks to clarify both these uncertainties, in the hope that more forgotten gunflint-making sites may be discovered.

Gunflint Quality

It seems likely that at first most users of firearms with flintlocks made their own gunflints on a "do it yourself" basis, using any flint that came to hand - as with the strike-a-light flints that had been in use in past centuries. Such flint must most often have been "field found" and as such would not have retained the desirable qualities which seem to go with flint that has lain undisturbed in its original bed of chalk. These qualities include; consistency in composition, lack of alien "intrusions", some degree of transparency and, above all, capability of long clean fracture. The flint also needed to be in fair sized nodules (i.e. at least fist sized) and in sufficient quantity to meet a demand which grew rapidly from 1660 onwards.

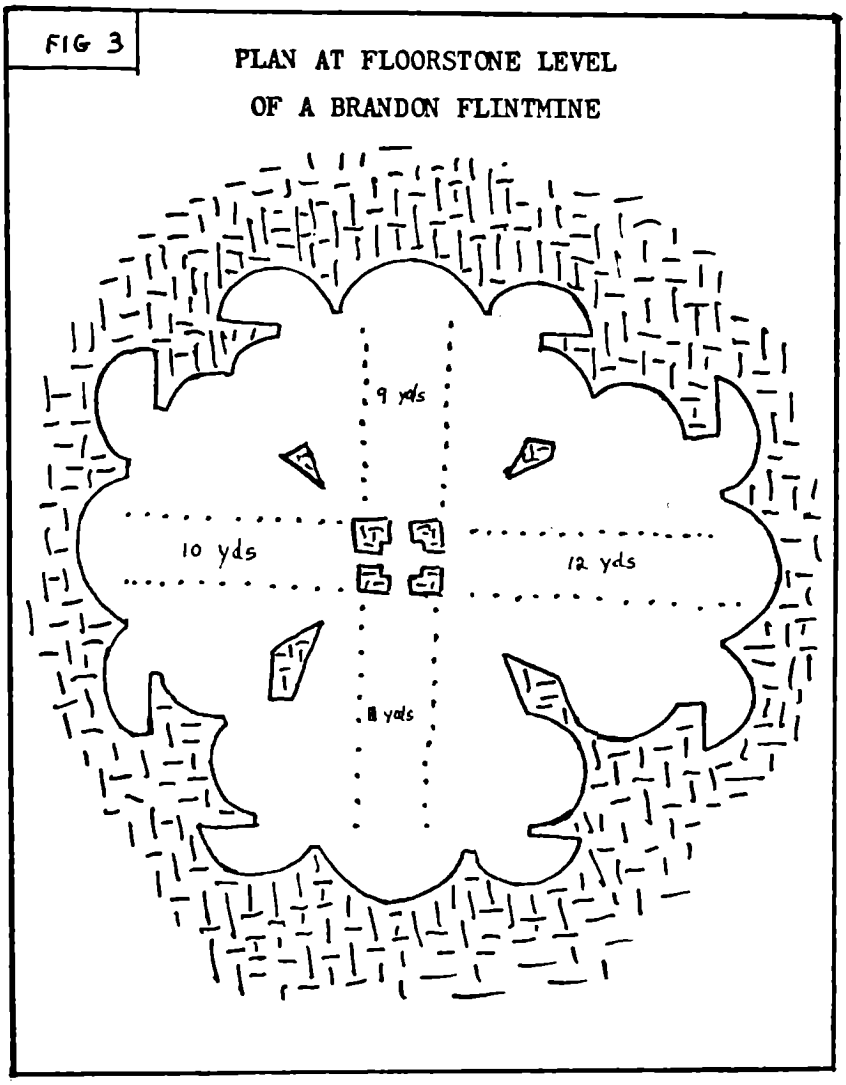
In England the best flint seems to have been black (with a brown translucency), though a grey rather more opaque flint was much used in the Salisbury Plain area. In France, the main output of gunflints was from the Meusnes district (Loir et Cher) where there was honey coloured flint, which in some localities had a very high degree of transparency.





Characteristics of Gunflint Waste

In Western Europe there have been two very distinct types of gunflint, each with its own characteristic "waste". The earlier "wedge" type was made from a semi-circular flake with a wedge shaped profile (Fig. 1). The thick end of the wedge formed the gunflint's heel and the thin end made the "firing edge". This firing edge struck sparks from the weapon's "steel" and so ignited the priming powder and thence the main charge. Note the swelling at the top of the slope which runs down to the firing edge. This is technically known as the "bulb of percussion" and is an almost invariable sign of the man-made flake. The later "platform" type of gunflint was much harder to make since the flint knapper needed to be able to strike off a long narrow double ridged flake with a sharp flange running the length of either side (Fig. 2). This flake was then knapped crossways into one or more gunflints - with one of the flanges making the firing edge. The long flake inevitably showed a bulb of percussion at the top end of its flat under surface This bulb would have made an awkward fit for the cock jaws of any flintlock weapon, and so the section always had to be discarded. Brandon, in fact, is still littered with this most characteristic piece of platform type gunflint waste.



(After Skertchley, p.23)

I believe that the platform method of gunflint manufacture, already in use in France by the first half of the 18th Century, only reached England around 1785. Being harder to make, the long flake needed flint of the highest quality and, where possible, a flint core of a size to yield flakes up to as much as seven or eight inches.

Mining Methods

The "do it yourself" gunflint-maker may have largely used field found flint, but by the second half of the 17th Century, the craftsman gunflint maker was seeking the more suitable flint which was emerging as a bye product of chalk quarry or chalk mine. One such source was the chalk quarries in the Erith-Swanscombe-Northfleet area of north west Kent, where lime was being burnt in vast quantities for the use of London's builders and whence there was easy transport, by road or river, to the Board of Ordnance's Small Gun Office at the Tower. Where chalk was being extracted from below ground, many tunnels and chambers may still survive and may yield evidence of local gunflint-making activity. This is particularly true of wedge type manufactories since the waste was prodigious and therefore the gunflint-maker was liable to break up his flint and flake it on the spot. This certainly was so in Chislehurst Caves where an abundance of wedge type cores and of waste flakes may be found buried in chalk debris on the floor of at least one disused passage.

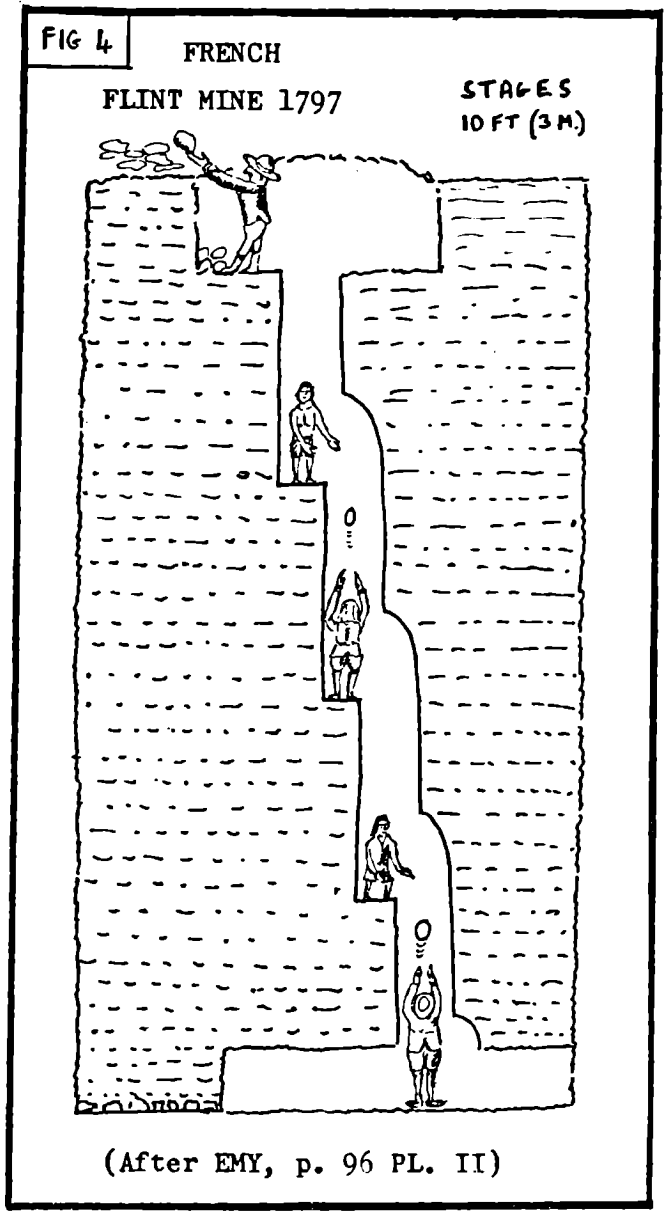
However, once the platform type technique reached England it was necessary to find top class flint in larger and more concentrated masses, and there is evidence that from 1790 onwards, flintmasters moved around southern England in search of such flint. One such was Richard Rissbrook, who, between 1790 and 1808, made gunflints at Bury St. Edmunds (Suffolk) and Thetford (Norfolk) - both still have underground chalk diggings -, at Kentford (Suffolk), at Margate (Kent) - again with existing underground chalk workings -, and at Santon Downham and its next door neighbour, Brandon. Here he met up with the tabular flint "floorstone" which, it appears, had been discovered around 1790 and which some four thousand years earlier had been worked at nearby Grimes Graves but had been long since forgotten. This must have been the best flint that Richard Rissbrook had come across, for here he stayed until, by 1813, he was supplying the Board of Ordnance with 140,000 musket flints a month, being one of the thirteen Brandon flintmasters who, at the critical stage of the war against Napoleon, were the Board of Ordnance's sole gunflint suppliers.

To reach the floorstone meant sinking thirty to forty foot (9.14 m. - 12.19 m.) shafts through the chalk. It was therefore necessary to make the shafts and galleries as narrow as possible and, once the flint had been taken out, to backfill with debris. Though Brandon still makes gunflints, the trade is no longer large enough to warrant mining for floorstone - so that it would not now be possible to explore a mine without considerable excavation. However, there are two detailed records of the mining, which was carried out by specialist flint diggers, working largely on their own. These two records Skertchley, pp. 21-26; Clarke, pp. 45-48) are not easy to interpret. It seems however, that, once the sand and gravel overburden had been removed, massive steps were dug down through the chalk. These were 3 ft. (0.91 m.) wide, 9 ft. (2.74 m.) long and 5 or 6 ft. (1.52 m. or 1.82 m.) deep. Successive steps appear to have been dug at right angles to each other and to have progressed northwards so as to give the mid day sun some chance of reaching the bottom of the shaft. The depth of the step was designed to enable the digger to lift from step to step pieces of flint which might weigh well over a hundredweight. The length of step gave him room to accumulate a fair amount of stone before he himself climbed up to join it. The floorstone was won by tunnelling below it, whereas in Neolithic times it was worked from above the seam. This variation in technique may, perhaps, be accounted for by the modern digger's ability to use metal tools.

The plan of flint extraction at floorstone level (Fig. 3) looks lopsided. There is a reason for this since the four main galleries, and surrounding "burrows", are each about a yard (1 m.) longer than their predecessor. The simple explanation is that the first gallery, having given up its floorstone, left extra space for the next gallery to dispose of its debris. It could, accordingly, enlarge its mining area, and the same would be true for the remaining two galleries.

The French mining method at Meusnes is shown (Fig. 4) in an illustration published in 1797 (Emy, p. 96 pl. II). Again the shaft goes down through the chalk in steps, but these are now 10 ft. deep (3.04 m.) and parallel to each other. They are also only 6 ft. (1.82 m.) long and 2 ft. (0.61 m.) wide. The increased depth is because the nodules were small enough to be thrown up from step to step and the reduction in the size of the step must have been because the diggers worked in a team of five or six and so were able to man each step and pass their flints up to the surface without any intermediate stacking.

SEYMOUR DE LOTBINIERE



(After EMY, p. 96 PL. II)

Conclusion: If this article should, by any chance, lead to the locating of any forgotten gunflint-making sites, I would be very grateful to learn of the discoveries. (Seymour de Lotbiniere, Brandon Hall, Brandon, Suffolk.)

Bibliography

CLARKE, Rainbird - The Flint Knapping Industry of Brandon. Antiquity, Vol. 9 1935. pp. 38 - 56. A detailed and well illustrated survey.

DE LOTBINIERE, Seymour - The Story of the English Gunflint, Some Theories and Queries. Journal of the Arms and Armour Society, Vol. IX No. 1. 1977. Carries a bibliography and many references to Board of Ordnance Records at the Public Record Office in London.

EMY, Jean - Histoire de la Pierre à Fusil, 1978. Blois, France. The most complete book yet written on gunflints and in particular on French gunflints.

SKERTCHLEY, S. J. B. - On the Manufacture of Gunflints. H.M. Stationary Office London, 1879. The most comprehensive account of the Brandon gunflint industry.